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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 11116PC2-ADC/HMG	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU2003/000860	International Filing Date (day/month/year) 3 July 2003	Priority Date (day/month/year) 4 July 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ H04L 12/66, 29/08		
Applicant WEBTRAF RESEARCH PTY LTD et al		

This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

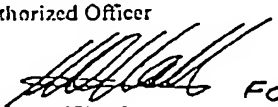
2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 29 January 2004	Date of completion of the report 27 August 2004
Name and mailing address of the IPE/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6283 3929	Authorized Officer  FOR Robert Finzi Telephone No. (02) 6283 2213

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/000860

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description, pages 1-3, 7-20, as originally filed,
pages , filed with the demand,
pages 4-6, 6A, received on 20 July 2004 with the letter of 20 July 2004
- ☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages 21-25, received on 20 July 2004 with the letter of 20 July 2004
- ☒ the drawings, pages/figs 1-6, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/000860

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-26	YES
	Claims NONE	NO
Inventive step (IS)	Claims 1-26	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims 1-26	YES
	Claims NONE	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents cited in the Australian ISR:

D1 WO 1999/034544 A1 (UKIAH SOFTWARE, INC.) 8 July 1999

D2 US 5867483 A (ENNIS, JR et al.) 2 February 1999

D3 US 6233618 B1 (SHANNON) 15 May 2001

D4 US 6052730 A (FELCIANO et al.) 18 April 2000

NOVELTY (N) and INVENTIVE STEP (IS) claims 1-26:

D1 is regarded as the closest prior art citation. Like the current application, '544 discloses a method of monitoring and controlling (via a gateway and firewall) data transfer between a first and second communication network. Furthermore, '544 discloses real time monitoring of data transfer to/from an authenticated user (eg differentiating user by an IP address) or group of pre determined users (eg group of known IP addresses). This system is suitable for real time monitoring, logging and fault notification, as well as enforcing users bandwidths according to preset rules. I refer you to the following sections which clearly disclose these features:

D1 abstract, page 4 (paragraphs 2 & 3), page 5 (paragraph 2), & pages 12-24

The current application differs from the aforementioned citations by dynamically controlling a users available bandwidth in real time (see claim 1 line 14). Although the aforementioned citations disclose real time monitoring, none disclose dynamically controlling at least one user's available bandwidth in real time. As such claims 1-26 are considered novel under Article 33(2) of the PCT. In addition I consider this difference would not have been obvious to a skilled person, and as such the subject matter of these claims is also considered to involve an inventive step under Article 33(3) PCT.

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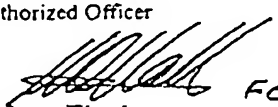
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1. Statement

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Inventive step (IS)	Claims 1-26	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims 1-26	YES
	Claims NONE	NO

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controlling data transfer between a user terminal coupled to a first communication network and a second communication network via a gateway and a firewall, said method including the steps of:

5 sending an access request to said gateway from a said user terminal requiring access to said second communication network;

said gateway reading said access request;

modifying at least one access rule in said firewall to permit access for said user terminal requesting access based on an authenticated IP address of said user terminal;

10 monitoring simultaneously at said firewall transfer of data between said user terminal and said second communication network; and dynamically controlling in real time bandwidth available to said user terminal.

The dynamic control of bandwidth available to the user terminal may occur whilst maintaining communication of the user terminal with the second communication network.

15 A restricted bandwidth may be allocated on the fly to a single user terminal, a plurality of user terminals and/or one or more specified user accounts. Bandwidth may be controlled for uploading and/or downloading data.

20 The method may further include the step of monitoring all ports of access of the user terminal.

The method may further include the step of enabling and/or disabling one or more ports of access to each user terminal.

Optionally, a single machine may include the gateway and the firewall.

25 Alternatively, the firewall may be in a different machine from the gateway.

Authentication of the IP address is preferably carried out by the gateway. Authentication may be carried out using an encryption/decryption process.

5 The method may further include the step of controlling access of a user terminal to the second communication network from a management terminal coupled to the first communication network.

The method may further include the step of monitoring a period of time a user terminal has access to the second communication network.

10 The method may further include the step of monitoring a quantity of data a user terminal uploads and/or downloads.

The method may further include the step of monitoring a cost to a user of their user terminal having access to the second communication network.

15 According to another aspect, the invention resides in a system for monitoring and controlling data transfer in communication networks, said system comprising:

one or more user terminals coupled to a first communication network;

a second communication network coupled to said first communication network via a gateway and a firewall;

20 wherein said firewall simultaneously monitors transfer of data between said one or more user terminals and said second communication network for said user terminals having an authenticated IP address that has access to said second communication network and dynamically controls bandwidth in real time available to said one or more user terminals.

Optionally, a single machine may include the gateway and the firewall.

25 Alternatively, the firewall may be in a different machine from the gateway.

Authentication of the IP address is preferably carried out by the gateway and may involve an encryption/decryption process to authenticate a remote terminal.

5 A restricted bandwidth may be allocated on the fly to a single user terminal, a plurality of user terminals and/or one or more specified user accounts. Bandwidth may be controlled for uploading and/or downloading data.

According to a further aspect, the invention resides in a gateway for monitoring and controlling data transfer in communication networks, said
10 gateway comprising:

a firewall for permitting access to a second communication network for one or more user terminals coupled to a first communication network having an authenticated IP address;

wherein said gateway monitors simultaneously at said firewall transfer
15 of data between said one or more user terminals and said second communication network and dynamically controls bandwidth in real time available to said one or more user terminals.

The gateway may further comprise means for enabling and/or disabling one or more ports of access to each user terminal.

20 Further aspects and features of the invention will become apparent from the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

To assist in understanding the invention and to enable a person skilled
25 in the art to put the invention into practical effect preferred embodiments of

6a

the invention will be described by way of example only with reference to the accompanying drawings, wherein:

FIG. 1 shows a schematic representation of a computer system in accordance with the present invention in which the method and apparatus of

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CLAIMS

1. A method of monitoring and controlling data transfer between a user terminal coupled to a first communication network and a second communication network via a gateway and a firewall, said method including the steps of:
- 5 sending an access request to said gateway from said user terminal requiring access to said second communication network;
- said gateway reading said access request;
- modifying at least one access rule in said firewall to permit access for
- 10 said user terminal requesting access based on an authenticated IP address of said user terminal requesting access;
- monitoring simultaneously at said firewall the transfer of data between said user terminal and said second communication network; and
- dynamically controlling in real time bandwidth available to said user
- 15 terminal.
2. The method of claim 1, wherein said dynamic control of bandwidth available to said user terminal occurs whilst maintaining communication of said user terminal with said second communication network.
- 20
3. The method of claim 1, wherein a restricted bandwidth is allocated to a single user terminal.
4. The method of claim 1, wherein a restricted bandwidth is shared
- 25 between a plurality of user terminals.

AMENDED SHEET
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5. The method of claim 1, wherein bandwidth is restricted for uploading data and/or downloading data.
- 5 6. The method of claim 1, wherein a restricted bandwidth is allocated to one or more terminals for a prescribed time period.
7. The method of claim 1, wherein a restricted bandwidth is allocated to one or more terminals on the basis of a priority status allocated to the one or more terminals or a user account.
- 10
8. The method of claim 1, wherein the IP address of a user terminal is authenticated on the basis that the user terminal has previously been authenticated by the gateway using an encryption/decryption process.
- 15
9. The method of claim 1, further including the step of monitoring all ports of access of said user terminal.
10. The method of claim 1, further including the step of enabling and/or disabling one or more ports of access of a user terminal.
- 20
11. The method of claim 1, further including the step of controlling access of a user terminal to the second communication network from a management terminal coupled to the first communication network.
- 25

12. The method of claim 1, further including the step of monitoring a period of time a user terminal has access to the second communication network.

5 13. The method of claim 1, further including the step of monitoring a quantity of data a user terminal uploads and/or downloads.

14. The method of claim 1, further including the step of monitoring a cost to a user of their user terminal having access to the second communication
10 network.

15. A system for monitoring and controlling data transfer in communication networks, said system comprising:
one or more user terminals coupled to a first communication network;
15 a second communication network coupled to said first communication network via a gateway and a firewall;
wherein said firewall simultaneously monitors transfer of data between said one or more user terminals and said second communication network for said user terminals having an authenticated IP address that
20 has access to said second communication network and dynamically controls in real time bandwidth available to said one or more user terminals.

16. The system of claim 15, wherein a single machine comprises both the
25 gateway and the firewall.

17. The system of claim 15, wherein the firewall is in a different machine from the gateway.

5 18. The system of claim 15, wherein authentication of the IP address is carried out by the gateway.

19. The system of claim 18, wherein authentication employs an encryption/decryption process to authenticate a remote terminal.

10

20. The system of claim 15, wherein the firewall simultaneously monitors all ports of access of one or more of said user terminals.

15

21. The system of claim 15, wherein a restricted bandwidth is allocated to a single user terminal.

22. The system of claim 15, wherein a restricted bandwidth is shared between a plurality of user terminals.

20

23. The system of claim 15, wherein a restricted bandwidth is allocated to a user account.

24. The system of claim 15, wherein bandwidth is restricted for uploading data and/or downloading data.

25

5

25. The system of claim 15, wherein said dynamic control of bandwidth available to said one or more user terminals occurs whilst maintaining communication of said one or more user terminals with said second communication network.

10

26. A gateway for monitoring and controlling data transfer in communication networks, said gateway comprising:

a firewall for permitting access to a second communication network for one or more user terminals coupled to a first communication network having an authenticated IP address;

15

wherein said gateway monitors simultaneously at said firewall transfer of data between said one or more user terminals and said second communication network and dynamically controls in real time bandwidth available to said one or more user terminals.

20

27. The gateway of claim 26, wherein the firewall simultaneously monitors all ports of access of one or more of said user terminals.

28. The gateway of claim 26, wherein the dynamic control of bandwidth available to said one or more user terminals occurs whilst maintaining communication of said one or more user terminals with said second communication network.

25

29. The gateway of claim 26, further comprising means for enabling and/or disabling one or more ports of access to each user terminal.